

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

POWER INTEGRATIONS, INC., a Delaware  
corporation,

Plaintiff,

v.

FAIRCHILD SEMICONDUCTOR  
INTERNATIONAL, INC., a Delaware  
corporation, and FAIRCHILD  
SEMICONDUCTOR CORPORATION,  
a Delaware corporation,

Defendants.

C.A. No. 04-1371

**DECLARATION OF DR. PAUL HOROWITZ IN SUPPORT OF  
DEFENDANTS' MOTION FOR SUMMARY JUDGMENT OF  
INVALIDITY OF CLAIM 1 OF U.S. PATENT NO. 6,249,876**

I, Paul Horowitz, the undersigned, declare as follows:

1. I am a Professor of Physics and of Electrical Engineering at Harvard University, where I teach courses in Physics and in Electronics, and where I perform and supervise experimental research. I have been asked to give expert opinions and testimony concerning Power Integrations' U.S. Patent No. 6,249,876 (the "'876 Patent").
2. As I stated in my Initial Expert Report, U.S. Pat. No. 4,638,417 ("Martin") includes all the elements of Claim 1 of the '876 patent, which it anticipates. The figure in Martin shows exactly the configuration described in Claim 1 of the '876 patent: a voltage-controlled oscillator ("VCO") driving a counter, whose output is coupled to a digital-to-analog converter ("DAC") (via a ROM), thence to the VCO's control input. The Martin circuit provides the oscillator for a DC-DC switching power supply.
3. As I indicated in my earlier reports, the presence of the EPROM element between the counter and the DAC does not prevent Martin from anticipating Claim 1 of the '876 patent. One of ordinary skill in the art would understand that the term "coupled" of Claim 1 does not

require a direct connection between the counter and the DAC. The EPROM element merely functions as a lookup table, using the signal provided by the counter to look up a stored signal. That stored signal is then provided to the DAC.

4. As I stated in my Initial Expert Report, the article by Wang and Sanders, "Programmed Pulsewidth Modulated Waveforms for Electromagnetic Interference Mitigation in DC-DC Converters," IEEE Transactions on Power Electronics, Vol. 8, No. 4, October 1993 ("Wang") includes all the elements of Claim 1 of the '876 patent, which it anticipates. Figure 20 of Wang shows a configuration consisting of an oscillator whose frequency can be varied by the output of a DAC, the oscillator's output clocking a counter whose output is coupled (via a ROM) to the DAC.

5. The ROM element in Wang functions in the same way as the EPROM element in the Martin patent. For the same reasons the EPROM does not prevent Martin from anticipating Claim 1 of the '876 patent, the presence of the ROM element does not prevent Wang from anticipating it.

6. As I stated in my Initial Expert Report, the article by Thomas G. Habetler entitled "Acoustic Noise Reduction in Sinusoidal PWM Drivers Using a Randomly Modulated Carrier," IEEE Transactions on Power Electronics, Vol. 6, No. 3, July 1991, p. 356 ("Habetler") includes all the elements of Claim 1 of the '876 patent, which it anticipates. Habetler deals with switching AC power supplies. Its Figure 5 illustrates a voltage-controlled oscillator whose output clocks a counter, the output of which is coupled (via a ROM) to a DAC whose output drives the VCO's control input.

7. The ROM element in Habetler functions in the same way as the EPROM element in the Martin patent. For the same reasons the EPROM does not prevent Martin from anticipating Claim 1 of the '876 patent, the presence of the ROM element does not prevent Habetler from anticipating it.

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8. I understand from Fairchild's attorneys that the preamble of Claim 1 is not a limitation. If, however, it were to be construed as a limitation, one of ordinary skill in the art would understand that each of the Martin, Wang, and Habetler references expressly disclose it.

I declare the foregoing is true and correct under penalty of perjury under the laws of the United States of America.

Executed on March 17, 2006 in Cambridge, Massachusetts.



Dr. Paul Horowitz

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**CERTIFICATE OF SERVICE**

I hereby certify that on the 17<sup>th</sup> day of March, 2006, the attached **DECLARATION OF DR. PAUL HOROWITZ IN SUPPORT OF DEFENDANTS' MOTION FOR SUMMARY JUDGMENT OF INVALIDITY OF CLAIM 1 OF U.S. PATENT NO. 6,249,876** was served upon the below-named counsel of record at the address and in the manner indicated:

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*/s/ John G. Day*

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John G. Day